

We Claim:

1. A process for continuously preparing food portions consisting of two or more different food items wrapped in a flexible film, comprising the steps of:

separately pumping each of the two or more food items to an extrusion location;

extruding each of the food items and combining them into the food portion, wherein the combined food items within the food portion retain their individual product identity; and

wrapping the food portion within the flexible film and sealing each food portion within the wrapper.

2. The process of Claim 1, wherein the water activity of at least one of the food items is modified in a predetermined manner by the addition of sugar.

3. The process of Claim 1, wherein the food portions comprise food slices which are sufficiently cohesive to permit manual removal of the food slice from the sealed wrapper while retaining textural and shape characteristics of the slice.

4. The process of Claim 1, wherein the food portions are hermetically sealed

within their wrappers.

5. The process of Claim 1, wherein the food portions comprise slices and the food items comprise nut butter and jelly.

6. The process of Claim 5, wherein the jelly comprises first and second thickeners, the first thickener causing the jelly to have a viscosity of less than about 5,000 centipoise during its extrusion, and the second thickener causing the jelly to have a viscosity of greater than about 100,000 centipoise following extrusion of the jelly and after setting of the second thickener.

7. The process of Claim 5, wherein the water activity of the jelly is reduced by the addition of sugar.

8. The process of Claim 5, wherein the water activity of the nut butter is increased by the addition of sugar.

9. The process of Claim 5, wherein a hard fat is added to the nut butter.


10. The process of Claim 5, wherein the nut butter comprises, by weight, about

50 - 90% peanut butter; 1 - 40% peanut flour; 0.5 - 5% stabilizer; 0 - 10% sucrose; and 0 - 2% salt.

11. The process of Claim 5, wherein the nut butter comprises, by weight, about 40 - 85% peanut butter; 0-10% peanut flour; 0-10% maltodextrin; 0-40% corn syrup; 0.5-5.0% stabilizer; 0.5-4.0% emulsifier; 0.1-3.0% salt; 0-35% fructose; 0-20% dextrose; and 0-40% water.

12. The process of Claim 5, wherein the jelly comprises, by weight, about 5 - 20% fruit juice; 0.5- 5 % high methoxyl pectin; 0.5- 5% low methoxyl pectin; 0.1 - 3% acidulants; and 0 - 2.5% vegetable oil.

13. The process of Claim 5, wherein the jelly comprises, by weight, about 5 - 20% fruit juice; 20-40% corn syrup; 15-35% fructose; 5-20% dextrose; 0.25-4.0% konjac flour; 0.05-2.0% carrageenan; 0.5-4.0% high methoxyl pectin; 0.1-3.0% citric acid; and 0-2.5% vegetable oil.

 14. The process of Claim 1, wherein the food portions comprise slices and two or more generally planar-shaped extrusion nozzles are used to provide a laminate food slice.

15. The process of Claim 14, wherein one or more divider plates are used to briefly maintain separation of the food items immediately following their extrusion.

16. The process of Claim 15, wherein the one or more divider plates are coated with a substance having a low coefficient of friction.

17. The process of Claim 16, wherein the one or more divider plates are coated with Teflon®.

18. The process of Claim 1, wherein the food portions comprise food slices which are continuously sealed and wrapped at a rate in excess of 300 slices/minute.

19. The process of Claim 18, wherein the food slices are continuously sealed and wrapped at a rate in excess of 700 slices/minute.

20. The process of Claim 18, wherein the food slices are continuously sealed and wrapped at a rate in excess of 1,000 slices/minute.

21. The process of Claim 1, wherein sensing mechanisms are employed to maintain or regulate weights of each of the two or more food items.

22. The process of Claim 1, wherein the amounts of each of the two or more food items within a food portion are maintained within predetermined ratios.

23. The process of Claim 21, wherein the sensing mechanism comprise mass flow meters, transducers and level sensors.

24. The process of Claim 1, further comprising the step of heating one or more of the food items into a soft, molten mass prior to their extrusion.

25. The process of Claim 1, wherein the food items are oriented in an alternating, generally stripe-shaped pattern within the food portions.

26. The process of Claim 1, further comprising a plurality of adjacent extrusion nozzles.

27. The process of Claim 1, further comprising two or more concentric extrusion tubes for extruding the food items in a variegated format.

28. The process of Claim 1, wherein the wrapped food portion has a refrigerated shelf life of greater than about six months.

29. The process of Claim 1, further comprising the step of cooling the food portions following extrusion.

30. The process of Claim 5, wherein the hardness of the nut butter within the finished food slice is in the range of about 0.25-4.0 Kg/cm² at 43°F.

31. The process of Claim 5, wherein the hardness of the jelly within the finished food slice is in the range of about 0.25-4.0 Kg/cm² at 43°F.

32. The process of Claim 1, further comprising the step of separately mixing ingredients for each of one or more of the food items prior to the pumping step.

33. The process of Claim 10, wherein the nut component of the nut butter is created by combining nut flour with an edible oil.

34. The process of Claim 6, wherein the first and second thickeners each comprise gels.

35. The process of Claim ~~1~~ wherein the extrusion step is performed continuously.

36. The process of Claim 1, wherein the at least one of the food items completely surrounds another of the food items within the wrapped food portion.

37. The process of Claim 1, wherein the food portion is consumable immediately following extrusion.

38. A process for continuously preparing food portions consisting of two or more different food items wrapped in a flexible film, comprising the steps of:

heating at least one of the two or more food items to a soft, molten mass;
separately pumping each of the two or more food items to an extrusion location;

extruding each of the food items and combining them into the food portion, wherein the food items maintain their individual product identity and organoleptic attributes; and

wrapping the food portions within the flexible film and sealing each food portion within the wrapper.

39. The process of Claim 38, wherein the extrusion step is performed continuously.

40. A process for continuously preparing conformed food slices consisting of nut butter and jelly wrapped in a flexible film, comprising the steps of:

- heating the nut butter and jelly;
- separately delivering each of the heated nut butter and jelly to an extrusion location;
- coextruding the nut butter and jelly so that each is combined within each food slice; and
- wrapping the coextruded food slices within the flexible film and sealing each food slice within the wrapper.

41. The process of Claim 40, wherein the nut butter and jelly within each food slice retain their individual product identity and organoleptic attributes.

42. The process of Claim 40, wherein the food slices are sufficiently cohesive to permit manual removal of the food slice from the wrapper while substantially retaining textural and shape characteristics of the slice.

43. The process of Claim 40, wherein the food slices are hermetically sealed within their wrappers.

44. A food slice wrapped in a flexible film, comprising:

nut butter and jelly whose product identity and organoleptic attributes are each individually maintained within the slice;

the food slice being sufficiently cohesive to permit manual removal from the film while substantially retaining textural and shape characteristics of the slice;

wherein the nut butter comprises, by weight, about 40-85% peanut butter; 0-40% peanut flour; 0.5-5.0% stabilizer; 0-10% sucrose; 0-3.0% salt; 0-10% maltodextrin; 0-40% high fructose corn syrup; 0-35% fructose; 0-20% dextrose; and 0-40% water.

45. A food slice wrapped in a flexible film, comprising:

nut butter and jelly whose product identity and organoleptic attributes are each individually maintained within the slice;

the food slice being sufficiently cohesive to permit manual removal from the film while substantially retaining textural and shape characteristics of the slice;

wherein the jelly comprises, by weight, about 40-55% sucrose; 5-20% fruit juice; 1-5% high methoxyl pectin; 1-5% low methoxyl pectin; 0.1-3% citric acid; 0-2.5% vegetable oil; 0-40% high fructose corn syrup; 13-35% fructose; 5-20% dextrose; 0.25-4% konjac flour; and 0.05-2% carrageenan.

46. The wrapped food slice of Claim 45, wherein the jelly comprises, by weight,

about 20-40% high fructose corn syrup.

47. The wrapped food slice of Claim 44, wherein the nut butter comprises, by weight, about 0-40% high fructose corn syrup and the jelly comprises, by weight, about 20-40% high fructose corn syrup.

48. The wrapped food slice of Claim 44, wherein the water activity of one or both of the nut butter and jelly is modified in a predetermined manner.

49. The wrapped food slice of Claim 44, wherein the differential water activity of the nut butter and jelly within the wrapped food slice is less than about 0.5.

50. The wrapped food slice of Claim 44, wherein the differential water activity of the nut butter and jelly within the wrapped food slice is less than about 0.2.

51. The wrapped food slice of Claim 44, wherein sugar is used to increase the water activity of the nut butter to a predetermined level or to decrease the water activity of the jelly to a predetermined level.

52. The wrapped food slice of Claim 44, wherein the food slice is hermetically sealed within the flexible film.

53. The wrapped food slice of Claim 44, wherein the flexible film comprises polypropylene having an ethylene vinyl alcohol oxygen barrier layer and one or more sealant layers comprising polypropylene, polyethylene and polybutylene.

54. The wrapped food slice of Claim 44, wherein the flexible film comprises polypropylene and a glycerol monostearate release agent.

55. The wrapped food slice of Claim 44, wherein the wrapped food slice has a refrigerated shelf life of greater than about three months.

56. The wrapped food slice of Claim 44, wherein the wrapped food slice has a refrigerated shelf life of greater than about six months.

57. The wrapped food slice of Claim 44, wherein the wrapped food slice includes food items to which food preservatives have not been added, and has a refrigerated shelf life of greater than about six months.

58. The wrapped food slice of Claim 44, wherein the hardness of the nut butter within the finished food slice is in the range of about 0.25-4.0 Kg/cm² at 43°F.

59. The food slice of Claim 44, wherein the hardness of the jelly within the finished food slice is in the range of about 0.25-4.0 Kg/cm² at 43°F.

60. A process for continuously preparing food portions consisting of two or more different food items wrapped in a flexible film, wherein the food items maintain their individual product identity, comprising the steps of:

preparing each of the two or more different food items;

separately delivering each of the two or more food items to an extrusion location;

continuously coextruding the food items and combining them into the food portion; and

wrapping the food portion within the flexible film and sealing each food portion within the wrapper.

61. A process for continuously preparing food portions consisting of two or more different food items wrapped in a flexible film, wherein the food items maintain their individual product identity, comprising the steps of:

preparing each of the two or more different food items;

continuously depositing each of the two or more different food items upon
a sanitary surface;

combining the two or more different food items into the food portion,
wherein each of the two or more different food items retain their individual product identity
and organoleptic attributes; and

wrapping the food portion within the flexible film and sealing each food
portion within the wrapper.

62. The process of Claim 61, wherein the sanitary surface is covered with the
flexible film.

63. A process for continuously preparing coformed food slices consisting of nut
butter and jelly wrapped in a flexible film, comprising the steps of:

heating each of the nut butter and jelly;

delivering each of the heated nut butter and jelly to an extrusion location;

continuously coextruding the nut butter and jelly;

filling the coextruded nut butter and jelly within the flexible film;

longitudinally sealing the film using one or more longitudinal sealing bars;

forming the filled film into a slice-shaped form either before or after

longitudinal sealing of the film;

sealing the film at cross-sealing locations; and

cooling the filled film either before or after cross-sealing of the film;

to thereby provide food slices each of which contain the nut butter and the jelly, the food slices being wrapped and sealed within the flexible film.

64. The process of Claim 63, wherein the food slice, while at ambient room temperatures, has sufficient cohesiveness such that it may be manually removed from its sealed wrapper while substantially retaining the textural and shape characteristics of the slice.

65. The process of Claim 63, wherein the food slices are hermetically sealed within the flexible film.

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